



# DECUS

## PROGRAM LIBRARY

DECUS NO.	8-373
TITLE	LISP DISK ARRAY
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SOURCE LANGUAGE	PAL-D

DECUS



1900-1901

1902-1903

1904-1905

1906-1907

1908-1909

1910-1911

1912-1913

1914-1915

1916-1917

1918-1919

1920-1921

1922-1923

1924-1925

1926-1927

## LISP DISK ARRAY

DECUS Program Library Write-up

DECUS No. 8-373

### ABSTRACT

This program allows the user to store up to 4096 individual numbers on disk. Storage is by a one-dimensional array. The function is accessed by EXPR. Both the read and write routines sit in the top of core, just under the monitor, and occupy only 26 (10) locations (13 LISP cells).

### USAGE

First load the LISP system tape, then this routine. Start LISP as usual. You can use the EXPR function now to read or write on disk or you can DEFINE two new functions:

```
DEFINE((  
(DISKREAD(LAMBDA(PLACE)  
  (EXPR 7555 NIL PLACE))))))
```

```
DEFINE((  
(DISKWRITE(LAMBDA(ITEM PLACE)  
  (EXPR 7546 ITEM PLACE))))))
```

The argument for DISKREAD is the location in the array that you wish to read. DISKREAD (4000) will read the 4000th(10) item in the array.

The arguments for DISKWRITE are the item you wish to write and the locations in the array in which you wish to write it.

With this package the user has access to the entire disk or several disks. In order to change the 4K module in which you are reading or writing, you can merely change the contents of TRACK (7572). There are 8 4K modules per DF32 disk. The EXPR function can be used to alter TRACK to be 0000 for the first module, 0100 for the second, 0200, the third, and so on.

There is no communication with the Monitor although this system has the ability to do so. The user could write a routine that would search the SAM block for free blocks and then use those areas only for storage. This routine could be written in LISP.

The system is originally set for the last 4K on a single disk.



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\*7546

WRITE,	DCA BUFFER	/STORE THE NUMBER
	JMS SET	/SETS WC, CA, AND E A REGISTER
	DMAW	/WRITE
	DFSC	/TRANSFER DONE?
	JMP .-1	/NO, WAIT.
	TAD BUFFER	/GET THE VALUE FOR THIS FUNCTION.
	JMP I P3175	/RETURN TO LISP WITH VALUE.

READ,	JMS SET	/SETS WC, CA, AND E A REGISTER
	DMAR	/READ
	JMP .-6	/EXIT AFTER TRANSFER WITH VALUE

SET,	Ø	
	CLA CMA	
	DCA I WC	/SET WC TO TRANSFER ONE WORD
	TAD PBUFF	/CA POINTS TO BUFFER-1
	DCA I CA	
	TAD TRACK	
	DEAL	/SET E A REGISTER TO THE TRACK ON DISK
	CLA CLL	
	TAD I PTARG	/ADDRESS OF ITEM WITHIN THE TRACK
	JMP I SET	/EXIT

TRACK,	7ØØ	/LAST 4K OF FIRST DISK
WC,	775Ø	/WORD COUNT
CA,	7751	/CURRENT ADDRESS
BUFFER,	Ø	
P3175,	3175	/ADDRESS OF RETURN TO LISP
PBUFF,	CA	

\*45

3725-7545

PTARG=41

PSARG=37